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Original Communications.

ALLEGED DEATH FROM ETHER.

*To the Editor of the British Medical Journal,*

SIR,—Your issue of October 11th contains the following:—

"We have this week to make the sad announcement of a death from the inhalation of ether. It occurred at the South Hants Infirmary. We shall be glad of the comments of Dr. Morgan and our Boston contemporaries."

The avowed interest attaching to death from ether, compared with that attending the rather common occurrence of death from chloroform, attests its rarity; and those who have been long familiar with the safety and efficiency of the former may think it perhaps a little late to subject it in England to an experimental test which the comparative fatality of chloroform seems at length to have secured for it. I venture to comply with the invitation with which you have honored your Boston contemporaries, believing that until some anæsthetic shall be discovered equally safe, with less odor and less bulk, or perhaps some better form of anæsthesia than that by inhalation, ether must be considered on the whole our best anæsthetic. We need not here distinguish too nicely between anæsthesia, narcotism, and inebriation, when effected through the lungs. It is more important that special attention should be directed to several points connected with this subject which seem to be inadequately emphasized in contemporary European literature, especially asphyxia, pulse, and the real difference between what the journals somewhat promiscuously denominate "death from ether" and "death from chloroform."

The Massachusetts General Hospital numbers more than 15,000 cases of ether inhalation, 6,000 of which have been recorded within the last five years. The quantity of ether consumed during these five years has been about 2,800 pounds,—half a pound, more or less, to a patient; in one case four and a half pounds in twelve hours. It fell to my lot, in 1846, and for a year or two after the discovery of ether anæsthesia, as junior surgeon, to administer most of the ether in that institution; and having been personally cognizant of a large proportion of the cases of its administration there, down to

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the present time, besides those in my own practice, I have never been satisfied of the occurrence of a single death which could be attributed to any property of ether, apart from the gradual and progressive inebriating influence which it possesses in common with other anæsthetic agents.

A detailed report of a case involving so urgent symptoms and so prompt action as the one alluded to is obviously liable to inaccuracy, and the account should therefore be accepted with reservation, and rather as a good illustration of an emergency quite likely to recur in the experience of those who may believe, with a late English medical journal, that the less the air, during ether inhalation, the better the anæsthesia, or, with the French chemist, that nitrous oxide only asphyxiates. Nobody doubts that asphyxia produces insensibility. This is easily shown with a bag containing a few gallons of atmospheric air. But this insensibility, necessarily brief, is unattended by exhilaration. It is distressing, accompanied by lividity, by rigidity if pushed far enough, and is doubtless responsible for much of the dread which certain patients have of pulmonary inebriation.

The case in question is reported as follows:—

“David Newman, aged 14, a strumous lad, who had suffered from repeated attacks of corneitis, was admitted an in-patient of the above institution on September 25th, 1873, under the care of Dr. Lake. On Wednesday, October 1st, he was brought into the operating room in order that iridectomy might be performed. When on the table, he exhibited considerable alarm, and required some persuasion before he was induced to lie down. Dr. Griffin having taken charge of the pulse, half an ounce of ether was poured on a sponge contained in a cone of spongio-piline, and the latter was closely applied to the mouth and nose. After a few minutes' inhalation, the ether being nearly exhausted, three drachms more were poured on the sponge. Shortly after commencing to inhale this second quantity, he began to struggle violently, getting at length into a state bordering on opisthotonos, his face becoming intensely scarlet. Dr. Griffin then announced that his pulse, which up to this time had been perfectly natural, had become very feeble. The ether was at once discontinued, when, the pulse having improved, Dr. Lake operated, no more ether being administered. At the close of the operation, which occupied only a few seconds in its performance, and before the eye could be bandaged, the pulse became imperceptible, the breathing was suspended, and the countenance livid. The tongue was drawn well out of the mouth, and held there; the calves of the legs were vigorously flagellated, and the chest freely slapped with a wet towel. The effect of these measures was to cause the patient to respire freely, to cry out lustily, and to kick about on the table; but this improvement did not last long,—probably about a minute. The pulse at the wrist did not return, and the breathing again stopped.”

Artificial respiration, electricity, &c., were resorted to, but without effect, and the autopsy revealed nothing of importance.

In order to be clearly understood, let me here concisely re-state this account, as I interpret the phenomena.

A feeble boy was etherized. During this process, though only partially narcotized, he was very completely asphyxiated, and, when nearly dead, was operated on without efforts at resuscitation. When at last his absolute prostration awakened serious alarm, he was vigorously flogged with the view of restoring his exhausted strength; and under this active stimulus was excited to a final muscular effort which expended and extinguished his flickering vitality. I believe that such a death might have occurred without the ether.

Let us consider the circumstances in detail, and see whether or not they substantiate this hypothesis; and first, the apparatus employed for inhalation. This was calculated to produce asphyxia.

If the spongio-pilline was covered, as usual, with rubber, no air could reach the patient, except in the interstice between the cone and the patient's face. But, according to the account, the cone was closely applied. If so, absolute asphyxia would ensue. It may seem superfluous to say that during the etherizing process a patient must live, as usual, upon oxygen. Let us even needlessly assert that without it a man must die. Ether will not save his life, if he is deprived of oxygen. It would not have saved Desdemona.

Asphyxia did ensue; but its symptoms passed unheeded. The patient struggled violently. Now a half-conscious struggle often results from mere muscular excitement, and is of little moment. But a rigid struggle, with opisthotonos, is very different. Such a spasm is connected with asphyxia, and may involve the muscles of the larynx. In this connection, let me remark that there is a wide distinction between the common and desirable snore of a relaxed and vibrating soft palate and a croupy stertor of the contracted laryngeal aperture. The latter is a part of that general rigidity of which opisthotonos is a manifestation, and by excluding air it indefinitely prolongs the asphyxia which occasions it. Air is its only remedy.

These appearances are familiar, in the practice of the Massachusetts General Hospital, even to the house pupils and ward tenders, to whom etherization is habitually entrusted. Lividity of the forehead indicates a probable similar color of the blood within the head, and announces that spasm may not be far off. Conversely, muscular spasm and laryngeal stertor direct attention to the color of the face. All these symptoms raise the question of admitting air promptly, and until the natural color returns. Indeed, it sometimes happens that because the muscles are rigid a patient seems imperfectly etherized, when the experimental admission of air relaxing the muscles proves the contrary. Even a half-conscious resistance, terminating in insensibility, often makes the patient a little livid; so that a struggle then suggests examination of his condition, and sometimes an interval and re-commencement.

If all this be true of inhalation with a sponge, through the meshes of which air has free access to the lungs, and which for hospital use, if not the most economical, is beyond comparison the simplest and safest ether inhaler, what were the chances of a slender boy, struggling desperately for breath, rigidly convulsed with opisthotonos, his face congested, his mouth and nose still sealed by an impervious cone forcibly and closely applied until the pulse gave way?

I unhesitatingly submit asphyxia as the primary cause of death, upon this report.

Notwithstanding this condition of the patient, he was operated on. With so complete asphyxia, it would in Boston be considered of the first importance, before operating, to re-establish respiration, pulse, and color; after which, more ether might be administered, to complete the anæsthesia. But in this case no such efforts were made, and no such interval was allowed. After a few seconds, which were occupied by the operation of iridectomy, the patient still livid from his struggle with the closely applied cone, "the pulse became imperceptible, the breathing was suspended," and in "about a minute" he was dead.

To this overwhelming effect of asphyxia upon a slender subject was doubtless added a certain amount of ether inebriation; but there is abundant evidence that this was but partial and incomplete. The quantity of ether administered was inconsiderable; and it is distinctly stated that the patient, when his legs were vigorously flagellated, and the chest freely slapped with a wet towel, "cried out lustily, and kicked about on the table," during the one minute he lived after the operation. Narcotism had not even reached insensibility to pain. No such imperfect ether anæsthesia can be held as principal in such a death.

It would be equally unphilosophical, in view of these facts, and in an endeavor to shift responsibility, to accuse the improbable shock of so slight a surgical operation, and still more any mysterious and as yet undiscovered property of ether, outside of that familiar, gradual, and comparatively innocuous influence which it possesses in common with other intoxicating agents. Further reference will be made to this.

A word about restoratives. The most effectual method of resuscitating a patient asphyxiated or over-dosed with ether is at once and quietly to get good air into his lungs. The volatile quality of both chloroform and ether makes their elimination from the pulmonary surfaces so easy, that, even when breathing seems to have ceased, a little thoracic movement, artificially assisted, generally enables the patient himself to reestablish respiration and brings up the pulse. A feeble boy, who had exhausted his strength in a violent struggle for breath and life, would have no great stock in store to respond to a vigorous flagellation. In this respect he might differ from one who had gone tranquilly to sleep with opium.



In arraigning ether, let us not confound things. All powerful therapeutic agents and expedients may, under certain circumstances, contribute to depress the system—ether and chloroform among the rest; chloroform, as stronger than ether, possessing, of the two, the greater depressing influence. But this effect of a mere narcotism common to both, and which may contribute to the death of a feeble or dying patient, is not the real subject of discussion in the medical journals. The question is, has either of these agents, besides this gradual narcotic power, any additional, different, and peculiar quality, which renders it dangerous? To this I unhesitatingly reply, that chloroform has, and ether has not.

When we say "death from chloroform," we mean death by a shock or poison peculiar to chloroform, even when inhaled by a healthy person, under the most favorable circumstances, with abundance of air, and with every precaution; sometimes occurring at the beginning of anæsthesia undertaken for a trivial operation, almost as if by prussic acid; the sudden failure of a normal pulse indicating that the patient is beyond recovery.

With ether, I believe this to be simply impossible. It always acts slowly, never depressing the vital powers suddenly, or beyond recovery, without fair warning by the pulse in time to avert danger by the simple expedient of filling the lungs with unadulterated air.

In a somewhat extended paper upon anæsthetic agents, written in 1848 at the request of the American Medical Association, and published in the Transactions of that body, about one year and a half after Morton performed his first painless extraction of a tooth, and only a few months after Professor Simpson's first experiment with chloroform, the absolute necessity of air, the essential indication of the pulse, the difference between the snore of narcotism and the livid stertor of asphyxia, are all specified and insisted on. I may perhaps be pardoned for quoting, in conclusion, the following passage, which touches the main point of modern ether discussion.

"Ether does not prevent, nor is it to be considered responsible for, the ordinary collapse, resulting, in certain states of the system, after certain injuries and certain operations. The strong argument in behalf of ether is, that so few instances have occurred in which it could be even suspected of agency in fatal results.

"With chloroform the evidence is a little different. Two somewhat remarkable cases of death, occurring during the brief administration of this agent for surgical purposes, at once present themselves—the Cincinnati case, and that of Mr. Meggison at Winlaton. In these cases death occurred in about five minutes from the beginning of the inhalation. \* \* \* \* These instances suggest a specific cause of danger. This is the sudden impression upon the system of a powerful inebriating agent. Abundant alcoholic stimulus has often produced immediate death; and analogy would suggest that inebriating vapor in the lungs may be the equivalent of similar

fluid in the stomach, and that in one or both of the cases alluded to, chloroform may have produced a sudden and overwhelming shock upon the system."\*

Your Obedient Servant,

HENRY J. BIGELOW.

#### NOTE.

The inodorous and transitory character of anæsthesia by nitrous oxide, notwithstanding its attendant asphyxia, may recommend it for the brief extraction of a tooth; and we should not ignore the fact that chloroform insensibility is, perhaps, as safe as many other experiences which people do not hesitate to encounter—crossing the Atlantic, for example—and yet one accustomed to the use of ether in surgical operations protracted during an hour or more, with an occasional examination or inquiry about the pulse, and a suggestion to admit air, if the medical student in attendance happens to forget it, is not a little impressed by the solicitous and apprehensive circumspection attending English anæsthesia.

Under these circumstances, a few purely practical suggestions, in a familiar form, however superfluous or even trite to a part of the surgical world, may perhaps not inappropriately serve as a record of the current views and practice of etherization in the hospital with which I am connected—which has, perhaps, a larger experience than any other, of this form of anæsthesia.

1. Accept the odor and bulk of ether as a cheap compromise for the safety of the patient and the confidence it gives the operator.

2. Believe that its anæsthetic effects, whether pleasant or objectionable, do not differ materially from those of chloroform.

3. Recognize the fact, that, while chloroform may kill without warning, ether never does.

4. Aim at anæsthesia by inebriation, not by asphyxia. With ether vapor, insure air to the patient. Though he struggle at the beginning, if he is not rigid or too livid, it is safe to compel inhalation; but if you can devote more time to the process, the resistance will be often less.

5. Use, and let hospital assistants use, a good-sized bell-shaped sponge; and then it may be a question of less rather than more air. The various forms of apparatus which restrict or graduate the quantity of air require more attention and more assistance. Of these a close bag is the worst. If the sponge is damp, it retains ether better, while the vapor is perhaps a little softer than when absolutely pure. The ready ignition of the latter suggests the precaution of moistening with water the skin and saturated linen, before employing near the face even galvano-cautery.

6. Keep the pulse in hand; at any rate, examine it often. When the pulse is right, the patient is so. With chloroform, the pulse may

\* *Anæsthetic Agents, their Mode of Exhibition and Physiological Effects*, by HENRY J. BIGELOW, M.D., one of the Surgeons of the Massachusetts General Hospital. *Transactions of the American Medical Association*. Vol. I. 1848.

be right and the patient wrong. If slow or feeble,\* or if the patient snores more than he need, save his strength by giving air—at any rate, until the pulse comes up; but renew the ether before he is sensible of pain. If the pulse shows that he is suddenly faint, lay him down and give him air.

7. If the patient is livid or rigid, give him air.

8. If his glottis contracts, give him air.

9. If he breathes badly, put the finger inside the cheek to admit air over the base of the tongue.

10. Should he vomit, of which there is usually timely notice, give the matter free exit by turning the patient, if recumbent, well to one side. Although there is less nausea with an empty stomach, it is not well to starve a patient about to encounter a protracted operation.

11. From time to time evacuate the tracheal mucus from the fauces, during an expiration, with a sponge held in dressing forceps.

12. In operations about the nose and mouth, give, for convenience, a powerful dose before beginning. Impregnate the whole circulation to the degree it usually attains in the middle of a long operation. The patient is then easily kept quiet. Otherwise a volume of fresh blood may find its way to the brain, and suddenly revive him. Let the repeated dose be also heavy.

13. In these operations, expect blood in the trachea, and evacuate it like the mucus—but, by reason of its quantity, more promptly.

14. Indeed, if such an operation promises much blood, have a tracheotomy tube ready, with hooks to hold the incision open while they compress the veins, so that the tube can be entered by a cut or two in a few seconds.

15. Or insert the tube before the operation, and put a sponge in the pharynx. The patient may then be etherized through the tube. I have had occasion to resort to these expedients.

16. In artificial respiration, act with the patient, and not against him. He will not cease to breathe at once, and wholly. Enjoin silence; watch the first attempt at inspiration, and at the expiration compress the thorax, aiding its elastic reaction, if absolutely necessary, by Sylvester's, or other quiet method. See that the tongue is well forward.

\* "Here is the precaution against danger; . . . this sign is the diminution of the force and frequency of the pulse."

"In an early case of the administration of ether by Dr. Morton, and which has been reported, the danger from over narcotism was quite as imminent as in any case I have since seen alluded to. As a bystander, on that occasion, I casually felt the pulse, and found it barely distinguishable; and though it subsequently still decreased, the means at once adopted for the restoration of the patient proved ultimately successful. This occurrence pointed to the pulse as an index of the stage of narcotism; a few subsequent experiments confirmed the belief; and I have not since hesitated to push etherism to complete insensibility, and to continue it, if necessary, during a length of time, provided the pulse remained full and strong. If it be retarded by ether, it is curious to observe with what certainty it recovers force and frequency, after a few inspirations of pure air. It will be inferred from these remarks that the pulse is to be carefully examined during the whole anæsthetic process, and that inhalation is to be temporarily discontinued at its indication."

—*Anæsthetic Agents*, &c., 1848.

17. Do not cool the patient by exposure and wet surroundings.

18. Being first assured that he can swallow a teaspoonful of water, feed him, if you like, with stimulus, during the expiration, but not the inspiration.

19. Give to all painful surgery, without exception, the benefit of anæsthesia; but a patient unequivocally exhausted by long disease—of the bladder, or of a joint, for example—or an habitual inebriate, may require care; without which, protracted narcotism may gradually depress his pulse beyond the rallying point. On the other hand, a healthy laborer, who reaches the hospital some hours after a railroad accident, cold, and literally pulseless at the wrist, from hæmorrhage and exposure, is, as a rule, stimulated by the ether, during and after at least one amputation.

20. Notwithstanding every expedient, there is occasionally an untoward subject who is habitually tetanic or livid, whenever etherized; or, more rarely, one whose respiration is notably intermittent before he becomes insensible. The latter requires attention. In children, it may be added, anæsthesia is cumulative.

Such are some of the minor considerations and prompt precautions which collectively determine the question of life or death in the exceptional emergencies of anæsthesia by ether. Many of them apply with equal force to chloroform; but against the shock of chloroform and its sequences, whether "chloroformic syncope," "cerebral anæmia," or "cerebral congestion," precaution avails nothing.

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SUCCESSFUL REMOVAL OF THE SPLEEN.—In the *Raccogliore Medico*, Dr. Sonsino gives an account of a case in which, on June 20th, Dr. Attilio Urbinato, of Cesino, removed a hypertrophied and mobile spleen. The incision was made in the middle line, and prolonged above the umbilicus, being at least seven inches in length. The operation was performed without much difficulty. After tying three small cutaneous arteries, opening the peritoneum, and drawing aside some loops of intestine, the spleen was seen, free from all abnormal adhesions, and of enormous size. At the inferior part was seen the gastro-splenic epiploon, which was adherent; and the vessels here were extremely dilated. At the upper part was seen the lower portion of the pancreas. The epiploon was detached, and the vessels tied. The ligatures, seven in number, were left inside without further precaution. The few adhesions of the pancreas were overcome without difficulty, simply by means of the finger. The largest vessels, and the connective tissue which surrounded them, were secured by a metallic loop and hempen ligature. The "toilette" of the abdominal cavity was made with great care. The patient lost but little blood. The ligatures of the vessels tied were passed out between the sutures, of which there were five deep and five superficial. The spleen weighed two and a half pounds. The operation lasted an hour; the patient bore the chloroform well, and subsequently appeared to be progressing favorably, but died of peritonitis three days after the operation.—*British Medical Journal*.

## Progress in Medicine.

### REPORT ON DISEASES OF THE THROAT.

By F. I. KNIGHT, M.D.

#### IN GENERAL.

(1.) Aphonia. ANDREW H. SMITH, M.D. Philadelphia Med. Times, Oct. 4, 1873.

(2.) Notes on a solution of iodoform. LEWIS ELSBERG, M.D., Professor of Laryngology, &c.

(3.) Der Kehlkopf oder die Erkenntniss und Behandlung des Menschlichen Stimm-organs im gesunden und erkrankten Zustande. MERKEL. Illustrierte Gesundheitsbücher. Leipsig. 1873.

(2.) Dr. Elsberg says that a great objection to the employment of iodoform ( $C_3H_3I_3$ ) in substance is its bad odor, which is very penetrating and persistent; furthermore, there has not been in use any effective solution for topical application in cases where ointments are inapplicable. Rhighini used an ethereal solution for direct inhalation, and Dr. Sass used an ethereal solution, and also a mixture of iodoform and sweet almond oil by means of a spray producer for inhalation. Dr. Gubler requested Messrs. Odin and Leymarie to ascertain the relative proportions in which iodoform is soluble in ether, and the most favorable conditions for its preparation; their experiments and conclusions are published in the *Pharmaceutical Journal*, Aug. 2, 1873. The *London Doctor* for Sept. 1st tells us that experiments were made with pure ether of 65° Baumé (specific gravity .724), and also with ether of 62° Baumé, and 56° Baumé, the temperature being 13° C. Eight grains of tincture obtained with these ethers contained iodoform in solution, respectively, to the following extent:—

Ether of 65° Baumé 1.61 grammes.

" 62° " 1.26 "

" 56° " 1.13 "

Their conclusions are,

1. To employ iodoform in the crystalline state.
2. To make the solution in a red glass flask by simple agitation.
3. To use the following proportions:—

Crystallized iodoform, 1 gramme;

Ether (60° Baumé) 4 grammes.

Dr. Elsberg had a solution prepared with Squibb's ether, and finds that it possesses all the advantages of iodoform in powder for local application, without its disadvantages. The solution smells only of ether, and the smarting produced on the mucous membrane is so momentary that the application is really painless. It may be applied to the mucous membrane of the throat, nose, mouth, larynx, vagina, rectum, &c. Its beneficial effects surpass Dr. Elsberg's expectations.

#### NARES.

(1.) On Fibrous Polypus of the Nose, with particulars of a case and operation. GEORGE LICHTENBERG, M.D., Surgeon to the German Hospital, &c. Lancet, Nov. 30, 1873. [The operation was one of Langenbeck's, viz., by displacing the nasal bone, and the nasal process of the maxillary bone.]

(2.) Cure of a Naso-pharyngeal Polypus, by galvano-cautery. CINISELLI. *Il Raccoglitore Medico*, Jan. 10, 1873. *Allg. Med. Central-Zeitung*, Feb. 22, 1873.

(3.) An improved Method of plugging the Posterior Nares. A. GODRICH. *British Med. Journal*, April 12, 1873.

(4.) MAGNUS. Der Nasenrachenraum; eine Studie am Lebenden gemacht. *Archiv f. Ohrenheilk.* vi. 4, p. 246 (Schmidt's).

(5.) SCHULZE. Ein Beitrag zur Technik der Nasendusche. *Arch. f. Ohrenheilk.* vi. 4, p. 263.

(6.) MORIN. Compression der Arteria Facialis bei Nasenbluten. (*Revue de Thérap. Méd. et Chirurg.* 1873.) *Allg. Med. Central-Zeitung*, June 14, 1873.

(2.) Ciniselli's case, reported as one of naso-pharyngeal polypus, cured by galvano-caustic, seems to have been one in which the treatment may be considered to have been electrolytic as much as in the case of Bruns. The tumor occupied the whole wall of the pharynx, completely stopping up the left nostril and partially the right, posteriorly. It extended deep down in the pharynx, and pushed the epiglottis against the base of the tongue. Its point of origin could not be determined. As it was not admissible to subject the much emaciated anæmic patient to a bloody operation, Ciniselli decided to apply "galvano-caustic." On November 20, 1869, treatment was commenced with a small Grenet's battery, of eight elements. The steel electrodes were twelve centimetres long, and covered with caoutchouc to within two and a half centimetres of the end. The needle of the negative pole (zinc) was introduced into the polyp through the left nostril, the other through the mouth into the right side of the tumor. The electric current was passed through the tumor for fourteen minutes. On the 29th of November, an eschar came away from the throat, and a brownish yellow fluid, mixed with shreds of dead cellular tissue, began to flow from the left nostril. On the 8th of December, respiration and deglutition were already easier. The treatment was continued every twenty days till October, 1871, when the tumor was so much diminished in size that only an insignificant "bony" (knöcherne) prominence was to be seen on the posterior inferior wall of the pharynx.

#### FAUCES.

(1.) COOK, A.B. Adhesion of the Soft Palate and Uvula with the posterior Wall of the Pharynx. Operation. Cure. *Philadelphia Med. and Surg. Reporter*, xxviii. 10, p. 203. March.

(2.) DEFRES. Retropharyngeal abscess; adenitis retropharyngealis. (*Gaz. des Hôpitaux*, No. 32.) *Schmidt's Jahrb.*

(3.) On Enlargement of the Tonsils as a cause of Nightmare. HAWARD. *Brit. Med. Journal*, June 7, 1873.

#### GROWTHS.

(1.) On the Results of Thyrotomy for the Removal of Growths from the Larynx. MORELL MACKENZIE. *British Medical Journal*, April 26th, and May 3d, 1873.

(2.) Eine neue Methode zur Ausrottung von Kehlkopfpolyphen. VON DR. JELENFFY in Pest. *Wiener Med. Woch.*, Nos. 11, 12 and 13. Jahrgang 23.

(3.) Critique on Jelenffy's method, &c. *Wien. Med. Presse*, No. 3, 1873.



- (4.) Reply from Dr. JELENFFY. *Wien. Med. Presse*, No. 6, 1873.  
 (5.) Exhibition of Specimen of Epithelioma of the Tongue and Larynx. BAGSHAW. *Med. Times and Gazette*, June 14, 1873.  
 (6.) Soft Tumors of the Larynx. Dr. EMILE NICOLAS DURANTY. *Lancet*, Jan. 4, 1873.  
 (7.) Abstract of Lecture on Disease of the Neck with Dyspnoea, necessitating Tracheotomy: probable Cancerous nature of the Disease. DE MORGAN. *Brit. Med. Journal*, May 17, 1873.  
 (8.) Die Sogenuante Kehlkopfsguillotine. BRUNS. *Wiener Med. Presse*, May 11, 1873.  
 (9.) EMELE, CARL. (a) Hochgradige Stenose der untern Larynx-hälfte; (b) Aphonie durch einen Kehlkopfpolyphen bedingt. (Sitzungs-Bericht des Vereins der Aerzte in Steiermark, ix. p. 5, 1872.) *Schmidt's Jahrb.*, June 23, 1873.  
 (10.) Zur electrolytischen Behandlung der Nasen-Rachenpolypen. P. BRUNS. *Berliner Klin. Woch.*, Aug. 11, 1873.  
 (11.) Du Traitement des Polypes Laryngiens. CHARLES LIVON. *Paris*. 1873.  
 (12.) On Section of the Laryngeal Cartilages for the Removal of Morbid Growths. DURHAM. *Med.-Chir. Trans.*, 2d series, vol. 37, 1872.  
 (1.) Dr. MACKENZIE's article is a thorough and exhaustive reply to a paper by Mr. Arthur Durham in the current volume of the *Medico-Chirurgical Transactions*, "On Section of the Laryngeal Cartilages for the Removal of Morbid Growths." The summary of results, according to Mackenzie, reduced to percentages and placed in a tabular form, is as follows:—

	Per ct. on 48 cases.
Complete success,*	14.58
Partial "	22.91
Death,	8.33
Severe dyspnoea, requiring use of canula,	31.25
Severe dyspnoea, requiring fresh operation,	8.33
	Per ct. on 45 cases.
Aphonia,	40.0
Dysphonia,	20.0
Modified voice,	11.11
Not stated, but probably defective voice,	6.66
	Percentage based on 39 benign cases.
Recurrence, or incomplete removal,	38.46

These results differ considerably from the percentages derived from 37 cases, which Mr. Durham introduced into his article, but space will not allow us to give Dr. Mackenzie's reasons for classifying many of the same cases differently (for Dr. M.'s list includes all those of Mr. Durham), but those who are interested are referred to his paper.

Dr. Mackenzie closes his paper by saying that, as a result of his own experience and from the investigations he has made into the subject, he ventures to submit the following propositions:—

*First*, That the operation ought never to be performed for loss of voice alone.

\* Complete success is understood to mean recovery of perfect voice and perfect respiration, and absence of recurrence of growth; partial success to mean recovery of one function, with injury to another, or temporary recovery of both functions, with subsequent recurrence of the growth.

*Second*, That in cases of cancer the operation is useless, except where the growth is very small and distinctly circumscribed.

*Third*, That the operation should be confined to those cases in which there is danger to life from suffocation or dysphagia, and then only to be performed after an experienced laryngoscopist has pronounced it impossible to remove the growth *per vias naturales*.

(10.) In our report published in this JOURNAL, November, 1872, we gave full particulars of a case of naso-pharyngeal polypus cured by Dr. Bruns by means of electrolysis, after very long treatment. Dr. Bruns now communicates a case in which a very large naso-pharyngeal polypus was cured by him in eleven applications of the electric current. Dr. B. publishes this case now partly to show that the treatment by electrolysis need not always be so prolonged as in his first case, which may have deterred others from trying it. The patient was a man of thirty years of age, who had had symptoms of the growth for fourteen years, and had undergone several ineffectual operations for removal.

On examination, a fibrous polypus was found filling the vault of the pharynx, attached on the right, reaching as low as the base of the uvula, covering the openings of the nares posteriorly, but not projecting into them. Besides this, the right nostril was filled with a number of mucous polypi. The treatment was continued from the 12th of March to the 7th of April.

Before treatment by electrolysis was commenced, a part of the mucous polypi were removed from the right nostril to facilitate the introduction of one of the electrodes. The battery used for obtaining the constant current was Frommhold's, of thirty-two elements. As electrodes at both poles, strong zinc needles were used, one being introduced into the tumor through the nostril, and the other through the mouth. The needle which was introduced through the nostril was covered with an Eustachian catheter of hard rubber. Nine applications were made in this way, both needle electrodes being inserted into the tumor. The number of elements included was six. On each attempt to increase the strength of the current the patient expressed pain. The circuit was closed with only one element and the number gradually increased, and in the same manner the number of elements was gradually diminished, in order to diminish the shock of opening and closing as much as possible. The length of the sittings was, usually, from fifteen to twenty-five minutes. The two other applications were made with the positive electrode covered with sponge held in the hand or upon the sternum. In these, the number of elements included was from ten to twenty, and the length of the sitting was thirty minutes.

The three first sittings occurred from the 12th to the 14th of March. During the succeeding four days, there was a profuse discharge of pus and mucus, and small particles of the tumor. Rhinoscopic examination showed the inferior surface of the tumor ulcerated and gangrenous, besides a considerable shrinking of it. The next three sittings occurred from the 19th to the 21st of March. Then there was a suspension of the treatment for ten days, on account of an attack of angina. After this, rhinoscopic examination showed that the tumor had diminished in size by one half. The seventh to the eleventh sitting occurred from the 1st to the 7th of April. During this time, there was a rapid

diminution of the tumor in size. At the end of this time, treatment was suspended on account of the temporary absence of Dr. B., and the patient went home. On his return, four weeks after, none of the tumor remained, only a cicatrix at the place of insertion.

DIPHTHERIA AND CROUP.

(1.) C. J. EBERTH. Die Diphtheritischen Processe. Centralbl. für die Med. Wissensch, No. 8, 1873. Allg. Med. Central-Zeitung, Feb. 19, 1873.

(2.) LETZERICH. Kritische Bemerkungen über die verschiedenen Methoden zur Heilung der Diphtherie.

(3.) LETZERICH. Statistische Uebersicht der vom Jahre, 1868, an bis Ende 1872 in seinen verschiedenen Wohnorten behandelten Diphtheriekranken mit Angabe der Gestorbenen.

(4.) KUHN. Ueber innere Behandlung der Diphtheritis. Berl. Klin. Woch., Feb. 10, 1873.

(5.) HENRY REYNOLDS. Successful local treatment of Diphtheria. (E. Wilton, Me.) [Carbolic acid and glycerin p. æ.] Medical News, Dec., 1872.

(6.) WELSCH, jun. Iod als Mittel gegen Croup. [Aerzt. Int. Blat., No. 12, 1873.] Allg. Med. Central Zeitung, April 16, 1873.

(7.) RAPP, jun. Brom inhalationen und Bepinselungen gegen Croup. (Bayer, Arztl. Intell Bl. xx. 4) Schmidt's Jahrb., June 23.

(8.) BOHM. Iod als Mittel gegen Croup, Allg. Med. Central-Zeitung, May 28, 1873.

(9.) Ueber gewisse ätiologische Beziehungen der Diphtheritis zu anderen Krankheiten, Zum Sande. Berl. Klin. Woch., July 7, 1873.

(10.) BINDER. Die Diphtheritis in Siebenbürgen, speziell in Agnetheln. Wiener Med. Woch., Aug. 16, 1873.

(11.) Dr. JOHN BARTLETT. Lime Baths in membranous Croup. Chicago Med. Examiner, Aug. 15. (Phil. Med. Times, Sept. 20, 1873.)

13. Des Complications Cardiaques du Croup et de la Diphtherie, et en particulier de l'endocardite secondaire diphtheritique. Par Le Dr. Labadie Lagrave. Paris. 1873.

TRACHEOTOMY AND LARYNGOTOMY.

(1.) MAUNDER. Cases of Laryngotomy. British Medical Journal, Feb. 1, 1873.

(2.) Tracheotomy performed by Galvano-caustic Apparatus. La France Médicale, Jan. 22, 1873. Practitioner, March, 1873.

(3.) MACKENZIE, SEMPLE and THORNTON. Eight cases of Tracheotomy. Med. Times and Gazette, June 7, 1873.

(4.) SCHECH. Ueber die Functionen der Nerven und Muskeln des Kehlkopfs. Berl. Klin. Woch., May 19, 1873.

(5.) DURHAM. On the Operation of Opening the Larynx by Section of the Cartilages, &c., for the removal of morbid growths. Med. Chir. Trans., 2d series, Vol. 37, 1872.

(6.) BOURDON. Tracheotomy by Galvano-caustic. Archiv. Gén. 6 Ser. xxi. p. 53. Jan. (Schmidt's).

(7.) B. W. RICHARDSON. On Artificial Respiration after the Operation of Tracheotomy. Med. Times and Gazette, Aug. 2, 1873.

(8.) DE RANSE. Nouveau procédé de Laryngotomie. Gazette Méd. de Paris, July 5, 1873.

(1.) Mr. Maunder reports three cases under this heading, which Vol. LXXXIX. No. 21A

occurred at the London Hospital. The first was one of naso-pharyngeal polypus, in which the breathing became so bad after an attempt at removal by the *écraseur*, that *tracheotomy* (the word used in the detailed report) was performed, and afterwards the growth was removed by slitting the soft palate, and perforating and cutting away sufficient of the hard to allow plenty of space. He then removed the growth by freely scraping bare all the bony surfaces from which it took its origin. The tumor was fibrous, and took its main origin from the basilar process of the occipital bone. Mr. Maunder remarked that these growths sprang from the periosteum, and, to remove them effectually, it was necessary to scrape off this completely. After the operation, the wound in the hard and soft palate was to be left open for some time, to examine the part readily, and to destroy, if necessary, with the galvanic cautery, any fresh growth.

The second case was one of syphilitic disease of the pharynx, in a syphilitic man, aged 30, who had had for several days severe attacks of dyspnoea. The soft palate and uvula were found to be united to the base of the tongue, completely closing up the fauces, with the exception of one small hole on the right side of the uvula, which admitted a No. 4 catheter. He said that he could eat meat after masticating it well, and seemed to make light of any great difficulty in swallowing. Laryngotomy was performed, and attempts were then regularly made to dilate the aperture above described by passing catheters and bougies, but the largest that could be passed was a No. 11 catheter. He could eat chop and vegetables without apparent difficulty. Mr. Maunder then enlarged the aperture by making an incision through it parallel with the uvula, and then forcibly dilating with his finger. The whole of the pharynx appeared to be filled up with diseased tissue. Five days afterwards, he had an attack of erysipelas of the face, which disappeared in twelve days. Mr. Maunder proposed still further to dilate the aperture in the pharynx by passing bougies at intervals, and, if necessary, by making incisions at right angles to the present opening.

The third case was one of inflammation of the floor of the mouth, tongue, pharynx, and left side of the neck, in a man of 21, who, on admission, attributed the swelling, redness, &c. of the above-named parts to a fight which he had had four days before. Two days after admission, the floor of the mouth was so much swollen that it reached about the level of the teeth, and was indented by them. The tongue so filled the mouth that the back of the mouth or fauces could not be seen. He could swallow nothing. He breathed moderately well. An incision into the side of the neck gave vent to a little pus. Dressing forceps were introduced into the wound, and through the deep fascia and withdrawn open. On the following evening, his breathing became rather worse; and, at 2, A.M., his condition was so urgent that the house surgeon performed laryngotomy. The neck was so much swollen and so brawny that the thyroid cartilage could not be felt; and after cutting through thickened and infiltrated tissue for more than an inch, the larynx was found to be pushed very much to the right of the median line. The operation afforded instantaneous relief. The swelling of the mouth, tongue and neck had so subsided two days after this operation that the fauces could readily be seen. In six days the tube was removed, and the patient was rapidly recovering.

(2.) This proceeding was originally introduced into practice by M. Amussat fils, in 1870, and was first performed on a boy, aged 13. Dr. Amussat passed a curved needle, carrying a double thread of platinum, through the integuments, so as to embrace at the same time about two centimetres of the trachea in the loop. After the removal of the needle, he seized one of the threads with two forceps in communication with an electric battery, and made the section of the tissues comprised in the loop without hæmorrhage. The trachea being opened, the child coughed violently, and expelled the foreign body which was in the trachea, and for which the operation had been performed. A week subsequently, the wound was healed and the patient well.

The first number of the *Archives Générales de Médecine* for 1873 contains a series of eight operations by different operators, the particulars being furnished by M. Bourdon.

The operation as performed by M. Verneuil is as follows: There are three steps; the incision of the skin and of the soft parts; the incision into the trachea, and the introduction of the canula. 1st. After having marked with the nail the point which corresponds to the inferior border of the cricoid cartilage, the extremity of the blade of the instrument is pressed in and made to cut downwards to an extent corresponding to the diameter of the canula that is desired to be introduced, and the thickness of the soft parts covering the trachea. In the infant, the first incision, which is made with great rapidity, ought not to be made deeper than the skin, lest the trachea should be opened at the outset, and there be a risk of cauterizing it, if not of perforating the posterior wall. 2d. The trachea being exposed, it should be seen that the wound corresponds to the middle line, and the point of the knife should be made to penetrate into the first interspace between the cartilages and the necessary number of rings divided. 3d. The introduction of the canula is the last and easiest of all. This proceeding, it is obvious, differs considerably from that of M. Amussat, but in view of the difficulties that are presented by the adult when tracheotomy is required, M. Bourdon prefers the latter.

#### FOREIGN BODIES.

(1.) LABOULBENE. Foreign Bodies in the Larynx. Bulletin de Thérapeutique. Lancet, Nov. 16, 1872.

(2.) TRENDLENBURG. Zur Extraction von Fremdkörpern aus dem Oesophagus. Langenbeck's Archiv, Band. xiv. Heft iii. Berliner Klinische Wochenschrift, Feb. 24, 1873.

(3.) CHEVALIER. Corps étranger dans le pharynx; abces rétropharyngéen; congestion pulmonaire (?); mort. Archiv. Méd. Belges. Gazette Médicale de Paris, Mar. 8, 1873.

(4.) LANDI. Corps étrangers dans la trachée; tracheotomie. Lo Sperimentale, 1872. Gazette Médicale de Paris, Jan. 25, 1873.

(5.) COHEN. Bone removed from the Larynx (post mortem). Phil. Med. Times, June 7, 1873.

(6.) ANNANDALE. Foreign Bodies in the Larynx; appearance of Croup. Edinburgh Med. Journ., xviii. p. 849, March.

(7.) DONLOS. Leech in the Pharynx ten days. Bull. de Thérapie, lxxiv. p. 236, March. Schmidt's Jahrb., June 23.

#### TRACHEA.

(1.) Plugging the Trachea in Operations on the Mouth and Throat. British Medical Journal, May 24, 1873.

(2.) D. S. LAMB, M.D., Act. Assist. Surgeon U. S. A. A Fatal Case of Congenital Tracheo-oesophageal Fistula. Philadelphia Medical Times, Aug. 9, 1873.

(2.) Dr. Lamb reports a very interesting case of tracheo-oesophageal fistula; he has not been able to find any case recorded which was exactly like it, those cases which have been recorded being conjoined with other malformation of the oesophagus, as, for instance, cul de sac termination. The patient in his case was seven weeks old at death, March 31, 1873. From its birth, almost every attempt at nursing was attended with strangling, and sometimes with lividity of skin. The mother stated that, during a portion of the previous summer, she had been roughly treated by her husband while he was intoxicated; on several occasions he had violently choked her. Dr. Lamb saw the child for the first time about sixty hours before death. The most prominent symptom was flatulence, which was abundant and very painful; no vomiting; several thin greenish stools daily; it nursed but little. At the autopsy, a small granular deposit was found upon the mucous membrane of the trachea, just below the fistulous opening; it was suspected to be from a milk-clot, but was washed off and lost before its composition could be made out with certainty. The right lung was very dark and hepatized throughout; there was also slight pleuritic adhesion between the upper and middle lobes; no fluid or lymph in the cavity. The left lung was somewhat emphysematous in its upper lobe; the anterior lower margin, to the extent of about a square inch, was in the same condition as the right lung; there was neither fluid, lymph nor adhesion in the left pleura. Heart normal. Stomach and intestines distended with flatus. Liver, spleen and kidneys normal. Mesentery somewhat congested.

The head was not examined, except so far as to notice the condition of the palate, which was found normal. The hyoid bone, larynx and portions of the trachea and oesophagus were removed. In the median line, nearly half an inch below the lower border of the cricoid cartilage, was a fistulous communication between the tubes, having a longitudinal diameter of three lines and a transverse diameter of one line; the direction of the fistula was downwards and backwards, the opening in the oesophagus being at a lower level than that in the trachea; the edges were smooth and rounded, and the mucous membrane normal.

This specimen is now in the Army Medical Museum, No. 1161 of the medical section. Dr. Lamb concludes his paper with abstracts of the descriptions of the cul de sac pharynx or oesophagus, with or without fistulous communications with the air-passages, found in various museum catalogues. He calls attention to the similarity in the cause of death in several of the cases. The two cases from which were obtained specimens 456 and 457 of the Boston Society for Medical Improvement appear to have terminated fatally from *pneumonia*, as did the case reported by him.

Dr. L. also remarks that it seems to be quite possible for fluids to find their way into the trachea of an infant, even without any obstruction of the oesophagus. He quotes from the *Lancet* of May 10th, 1873, the case of a child aged "one year, which was fed by the bottle, put to bed at six o'clock, and died at midnight with all the signs of intense dyspnoea. At the post-mortem examination (ten hours after death), the two lower lobes of the lungs were found quite softened,



grayish, having a smell of butter, and, in a word, having undergone the action of gastric juice. Altered milk was found in the trachea and bronchi. In this case, the milk contained in the stomach, which doubtless had been taken in excess, was vomited, and, on account of the horizontal posture, had penetrated into the air-passages. Dr. Panot drew the attention of his colleagues to the importance of the fact from a medico-legal point of view. He thinks that this occurrence must be rather frequent, as he has already witnessed two cases in his own sphere of observation."

#### ŒSOPHAGUS.

(1.) EMMINGHAUS. Einiges über Diagnostik und Therapie mit der Schlundsonde. Deutsches Archiv für Klinische Medicin, xi. Band, iii. Heft.

(2.) FRANCIS MASON. Carcinoma Œsophagi; Gastrotomy; Death. Lancet, Jan. 25th, 1873.

(3.) TOTHERICK and JACKSON. Impassable Stricture of the Œsophagus; Gastrotomy; Death. Brit. Med. Journal, May 24, 1873.

(4.) HEYFELDER, O. Krebsige Striktur des Œsophagus, Ernährung durch die Schlundsonde und Fleisch-Pankreas-Klystir. Deutsche Ztschr. f. Chir. ii. 3, p. 324. Schmidt's Jahrb.

(5.) WEICHSELBAUM. Stricture Œsophagi; Œsophagotomie; Death. (Von Podrazki's Klinik.) Wien. Med., Aug. 16, 1873.

#### ŒSOPHAGOTOMY.

(1.) TILLAUX. Œsophagotomy. Bull de Thér., lxxxiv. p. 14, Jan. 15. Schmidt's.

#### INSTRUMENTS.

(1.) DOBELL's Tongue Spatula. Brit. Med. Journal, March 1, p. 228. Schmidt's.

(2.) WELSCH. Ueber Anwendung von Hohlspiegeln als Kehlkopf-spiegel. Deutsche Klinik, 14.

(3.) An improved Tonsillotome. (Said to have been suggested by Dr. J. S. Billings, U. S. A.) Phil. Medical Times, June 28, 1873. [Seems to be identical with the tonsillotome made by Mayer and Metzger, of London.]

(4.) BOEKER. Ein Handgriff zur Anwendung des Galvanokaustik innerhalb des Kehlkopfs. Berliner Klin. Woch., July 28, 1873.

#### LARYNGITIS.

(1.) GERHARDT. Chorditis vocalis inferior hypertrophica. Deutsches Archiv, Bd. ii. Heft. 7, p. 583.

(2.) JAMES SAWYER, M.B., Birmingham. On the Treatment of Chronic Inflammatory Diseases of the Larynx. Brit. Med. Journal, July 12, 1873.

[To be concluded.]

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A DEFINITION OF LIFE.—The *Medical and Surgical Reporter* offers the following, which it states is "substantially, though not verbally, propounded by perhaps the profoundest living zoölogist of this century, Cuvier, in his *Animal Kingdom* (vol. ii. p. 71):—"Life is that condition of being in which the form is more essential than the matter."

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### Reports of Medical Societies.

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MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY. C. E. VAUGHAN, M.D., SEC.

The semi-annual meeting was held at North Cambridge, October 15th, 1873, Dr. Morrill Wyman presiding.

Dr. Wellington read an interesting paper upon "Peri-Uterine Hæmatocele." A discussion followed upon a question raised by Dr. Hosmer, as to the origin of the acute pain in these cases.

Dr. Wyman said that, in extra-uterine foetation, the placenta is often attached to the peritoneum, which assumes the functions of the uterine surface.

Dr. Wellington cited Dr. Garland's case, reported in the Boston Medical and Surgical Journal of July last, where the placenta was probably planted on the outside of the uterus.

The President related the case of a drover, who was taken in the country with acute abdominal pain, and came to him on his way to Brighton. There was tenderness in the right iliac region, quick pulse, &c. He went to Brighton contrary to advice. The next day, very severe abdominal pain came on, and the man sank and died in eight or ten hours.

The autopsy showed a perforation of intestine, with purulent secretion enclosed and protected by adhesions. In the second attack, the adhesions had broken down, and there were evidences of beginning peritonitis. The system tolerated a small effusion, but succumbed to a more extensive one, which occurred rather from what we call shock, than from peritonitis.

Two months since, Dr. Hosmer was called to a patient in advanced stage of phthisis of the lungs. He found, besides the usual signs of phthisis, abnormal resonance at base of lung, and, at base and behind, strongly marked amphoric breathing. There was acute pain in the right side, and dyspnoea, and, of course, rupture of the pleura.

Dr. Wyman spoke of a man in a late stage of pulmonary tuberculosis. He was sent for in haste. He found the chest resonant, and an undoubted perforation of the pleura. Not much pain. The patient began to improve from that time. The cough nearly disappeared, and the man went back to wood sawing, and lived at least a year after the occurrence.

Query. Was the tubercular affection, in accordance with the views of the later German school, local, or general and constitutional, according to the English school? It looks as if the former were the case.

Dr. Webber, of Cambridge, mentioned a recent case of labor, with the head presenting, preceded by an arm and the funis; pelvis roomy and os dilated. He succeeded in reducing the arm and funis, after placing the patient upon her hands and knees, with her head low.

Dr. Nichols related a case of rupture of the uterus in a tenth pregnancy. Pains began at noon, and were very severe until 4 P.M., when the rupture occurred. Seen at 5½; no apparent shock then; pulse good. A knuckle of intestine was first felt in the vagina; the feet were reached above the brim of the pelvis before the diagnosis was made. Dr. N. was struck by the ease with which the parts of the

child could be made out through the abdominal walls. After delivery, a large rent was found some distance above the os. Patient sank slowly, and died twenty-three hours after the accident.

Dr. Warren, of Waltham, mentioned a case which occurred some years since. The pains were very severe, and the os dilated slowly. After a violent pain, the fœtus was found partly expelled through a large rent just above the os; the placenta soon followed through the same aperture, and the woman made a good recovery. She was confined again, fourteen months later. On examination, a rent was found just above the os uteri, the cervix forming a band between the rent and the os, against which the head bore down strongly with each pain. The band was divided with scissors, and the child was born in half an hour. Woman again made a good recovery.

Dr. Warren said that, at the Isle of Shoals the past summer, he met several victims of autumnal catarrh. All said that they had not suffered as much this year as usual.

Dr. Wyman said that, in Cambridge, several were attacked later and more mildly than usual, but that one, at least, in Boston, had suffered more than usual. In some cases this year, quinine seemed to afford unusual relief. The disease is attributed by some to vegetation. Is the difference in different years owing to the greater abundance of some particular plants?

In answer to inquiries, the President spoke of the recent meeting of the British Medical Association, which he attended. The meeting, which lasted five days, was attended by 1200 or 1500 members. A large number of papers were read. The ether question was fully discussed. A variety of inhaling apparatus was exhibited, and as each inventor expressed perfect confidence in the safety of ether with his particular apparatus, the evidence in favor of ether was pretty strong.

While abroad, Dr. Wyman examined the London sewerage system, and gave a clear and interesting description of the same and its practical working, by which all the sewage is fully diluted and carried to a point upon the river, twelve miles below the city. He argued that some such system must at some future time be adopted here.

He referred also to the excellent paper by Dr. Bowditch, in the Second Report of the Massachusetts State Board of Health.

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GANGRENE OF THE LUNGS IN CHILDREN. By LOUISA ATKINS. London. —The authoress gives, in this article, a resumé of what was to be found in the literature of the above disease in children, adding four cases obtained from Prof. Wyss. Of sixty-five recorded cases, the history of only thirty could be made use of, the data of the others being too imperfect. The following are given as the local causes:—

1. On the side of the vessels: (1) Compression of the smaller vessels from severe inflammatory processes in the lungs, or thrombosis caused by stagnation of the blood as a result of prolonged and severe inflammation (traumatic pneumonia), croupous and catarrhal pneumonia (after measles, &c).

2. On the side of the bronchi: (1) Absorption of putrid matter from the bronchi after noma, gangrene of the pharynx, larynx (gangrene after variola, scarlatina, measles, &c).

### Bibliographical Notices.

*Lehrbuch der Geburtshülfe mit Einschluss der Pathologie der Schwangerschaft und des Wochenbettes.* Von Dr. KARL SCHRÖDER. Mit 26 in den Text gedruckten Holzschnitten. Dritte, neu durchgearbeitete Auflage. Bonn. 1872. Pp. 698.

*A Manual of Midwifery.* By Dr. KARL SCHRÖDER. Translated into English from the third German edition by Dr. CHARLES H. CARTER (London). New York: D. Appleton & Co. 1873. Pp. 388.

IN 1847, Dr. Naegele, Professor in the University at Heidelberg, published a work on Midwifery which has ever since been considered the standard text-book in Germany. The author died (July 5, 1851) soon after his work was published, but several later editions were printed under the careful supervision of Dr. Genser, Professor of Midwifery at Dresden. Though every effort was made by the editor to keep the work up to the advanced views held by the real workers on this subject in the profession, it became more and more evident that a complete revision of the work was necessary. To do this, and yet retain the original work of Naegele, became an impossibility, and a pressing need was felt all through Germany for some new treatise which should give all the results of the recent researches in the physiology and pathology of gestation and parturition, together with the newest methods of treatment for the various complications which are met with in the lying-in room.

With a view to meet this want, Dr. Schröder, Professor of Midwifery and Director of the Lying-in Hospital connected with the University of Erlangen, published in 1870 his work, the title of which we have given above. The demand for the book was very great, and in 1871 a second edition was published, followed the next year by yet a third.

The work is eminently a practical one, and omits all long discussions on still unsettled points, either of theory or practice. One of the most valuable portions of the book, as a work of reference, is the historical account with which Dr. Schröder prefaces every new subject, thus enabling the curious reader to trace the various theories or facts back to their several chronological starting points. We regret, however, to notice that there is an omission of all anatomical description of the pelvic bones or the generative organs, the author referring the reader to works of anatomy for all the information required on these points. This, it seems to us, is really a serious omission, since few books of anatomy even allude to the pelvic planes, angles and diameters which, though possessing but little practical value to anatomists, are yet of such vital importance to obstetricians. Space will not allow of any lengthy notice of the various contents of the book, but we cannot help alluding here to the excellent chapter on puerperal fever, under which term are included all those various disorders which are incident to the puerperal state, and which owe their origin to the absorption of decomposing organic matter. He does not consider that puerperal fever is, strictly speaking, contagious, inasmuch as the secretions from patients suffering from this disease have nothing specific in themselves, but owe their origin to organic matter

which is in a state of putrefaction, and which will produce puerperal fever in women who have been confined, just as they will give rise to phlegmonous erysipelas in surgical patients. For such absorption to take place, an abraded surface is necessary, and such are to be found caused by the passage of the child through the cervix uteri and the mucous membrane of the vagina and vulva.

As a text-book, we doubt if the work will be considered satisfactory. The author has treated his subject in such a condensed manner that the student, who is beginning the study of obstetrics, is often at a loss to understand many statements which a fuller explanation would have rendered intelligible. As a work for collateral reading, however, or as a book of reference for the practising physician, this very conciseness renders it all the more valuable.

The work has been admirably translated into English by Dr. Charles H. Carter (London), and recently published in this country by D. Appleton & Co. (New York). The plates are well drawn, and the publishers may congratulate themselves on the way in which their share of the work has been done.

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*Lectures on Clinical Medicine.* By A. TROUSSEAU. Translated by Sir JOHN ROSE CORMACK, M.D., F.R.S.E., and P. VICTOR BAZIRE, M.D., from the third Revised and Enlarged Edition. In two volumes. Philadelphia: Lindsay & Blakiston. 1873.

THESE clinical lectures of Trousseau are not new to the medical world. Fully recognizing their importance as an exposition of clinical medicine by one of the masters, the Sydenham Society long ago published a translation from the French, and this Sydenham Edition has had wide-spread and well-merited favor among the profession. There is no occasion now to review a work which has become classical in its own department of literature, and which is a monument of scientific learning, zeal and skill.

We are therefore concerned, in this connection, rather with the manner than with the subject-matter of this publication. To fill a supposed demand among American practitioners, the publishers have, in these volumes, reproduced all the clinical lectures of Trousseau as originally translated by Sir John Rose Cormack and Dr. Bazire. By the use of closer type and thinner paper, and by the omission of M. Bazire's notes, the English edition, in passing through the American press, is reduced from five volumes to two. The order of the lectures is made to conform, in the American re-print, to their sequence as delivered by their author at Hôtel Dieu; they therefore appear without any other special relationship, one to another, than that of time. The typography of the American publication is very good, but it will not bear comparison with the London imprint. An unusually full index adds very much to the value of the newer work.

Those who wish to possess, in the English language, the great work of Trousseau, may now, through the enterprise of the well-known medical book publishers of Philadelphia, have the choice between the five, well-printed, carefully annotated, comparatively expensive volumes of the Sydenham edition, and the two rather bulky, closely-printed, inexpensive volumes of the American publication. What, in the latter, is sacrificed in appearance, is gained in facility of reference, and in usefulness to the traditional "busy practitioner."

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**Boston Medical and Surgical Journal.**

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BOSTON: THURSDAY, NOVEMBER 20, 1873.

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THE announcement in the morning papers of November 11th that on the previous day the death of a lady by ether had occurred in the practice of Dr. Eastham, a dentist in this city, caused much excitement in professional circles. The death had taken place about noon, but very few, except those particularly interested, were aware of it till the next day. The coroner, Dr. Ainsworth, who was called in directly after the accident, formed a jury of physicians and apothecaries and ordered an autopsy. This was made the next morning by Dr. R. H. Fitz, Pathologist to the Massachusetts General Hospital, and on the same day the jury met, and, having viewed the body, adjourned till the 14th. Before our last number went to press, we had barely time to collect sufficient evidence to justify the statement which we made that the anæsthetic was either chloroform or a mixture of chloroform and ether. The latter proves to be the one used. The jury met again on the 14th, and having heard a part of the evidence readjourned till the evening of Wednesday the 19th. We shall refrain from comment on the evidence till the verdict is rendered, but present the following account of the proceedings which we condense from a complete stenographic report taken especially for us. On Nov. 14th, the first witness was Dr. Edson, who testified that he had twice attended Mrs. Crie, the deceased, during her confinements, but had never given her an anæsthetic, though she had desired it. This was owing to his disapproval of anæsthetics during labor, except in rare cases. He would have given one to the deceased as readily as to any patient in her case.

Dr. Fitz was next called, and read the following account of the autopsy:—

Examination made twenty-one hours after death. Body preserved in ice; rigidity well marked; no discoloration of face or anterior portions of the body; skull cap and dura mater normal; longitudinal veins empty; moderate amount of blood in the veins of the arachnoid; nothing abnormal observed at the base of the brain. The bloodvessels in this region contained but little blood; cerebral substance firm, containing much less blood than usual, not particularly moist; absence of any anatomical changes; ventricles apparently normal. Pericardium healthy. Heart moderately contracted, unusually small and of usual color; aorta of less than the normal calibre, walls unusually thin and elastic; cavities of the heart contained dark fluid blood, of no unusual odor or color; right side of the heart contained more blood than the left; valves healthy, muscular substance apparently normal. Pleural cavities healthy, containing a small amount of reddish fluid. Lungs of



a bluish-red color, the posterior dependent portions quite dark; tissue contained air and a somewhat increased amount of blood; absence of any special degree of œdema; in upper lobes of both lungs a rare, small, cheesy nodule. The larynx, trachea, bronchial tubes and the larger vessels at the root of the lungs free from changes. Spleen of normal size and firmness, the color dark blue. Kidneys unusually firm, capsule rather more adherent than usual; in sections, the organ was of a grayish slate color; bloodvessels, including the malpighian organs, unusually distinct from the presence of blood; tubular structure apparently healthy. Bladder healthy. Uterus and ovaries well developed; an old *corpus luteum* present; the lining membrane of the body of the uterus unusually injected, covered with a viscid, bloody fluid. Liver of normal size, dark color, containing rather more blood than usual, otherwise healthy; stomach and intestines presented no unusual appearances.

The anatomical examination gave no evidence of recent disease of any of the organs, or of chronic alterations sufficient to account for death; the fluid conditions of the blood, the diminished amount in the brain and the increased amount in the thoracic and abdominal organs were abnormal, and might have been the result of various causes; the diminished size of the heart and of the aorta were probably of congenital origin.

*Question.* Do you consider the absence of blood in the brain and cerebral cavities as abnormal? *Answer.* Yes, sir.

*Q.* Do you ever find the blood liquid so long after death, except where chloroform is used? *A.* Yes, sir; it is so in any case of death from asphyxia, in cases of poison from certain gases, and in cases of some very malignant forms of disease where decomposition is very rapid.

*Q.* I suppose a perfectly healthy woman would not be likely to have this sudden change take place in her without some cause similar to those you have mentioned? *A.* Very unlikely.

Dr. Eastham then testified that he graduated in medicine in 1841, had practised dentistry nearly all the time since, and had used anæsthetics from their introduction. The deceased had been his patient for twelve or fourteen years, during which he had on several occasions given her anæsthetics, chloroform, ether and gas, both severally and in combination. The deceased came to his office in the forenoon of the 10th, and there met Mrs. Sawyer, whose tooth he extracted after giving nitrous oxide. Mrs. Sawyer urged the deceased to take gas, but she insisted upon ether. He made a mixture of a little *chloroform* and *ether*.

*Question.* You made a mixture at the time? *Answer.* Yes, sir; I usually do that way.

*Q.* Please tell whether or not on this occasion you measured the quantity? *A.* No. I have been so familiar with it that I usually guess at the proportion. I never measure it. I always calculate to have more ether than chloroform.

*Q.* How much of this mixture did you make? *A.* Not more than an ounce or an ounce and a half.

*Q.* How did you administer it? *A.* I always administer it on a

sponge. I always drop the window at the top, so as to have fresh air. I pour on to this sponge (it is a hollow one about the bigness of my two hands) about a big teaspoonful, as near as I can judge.

Q. That would have been about a third of the mixture? A. No, not so much as that. I always begin gradually in applying it, first holding the sponge a little distance from the nose and then moving it nearer. As she began to breathe it, she says, "Give me enough this time, sure." This she repeated three times. I did not fully etherize her, nor did I intend to. After she had breathed two or three minutes, I said to her, "I am going to take this tooth out." She shook her head, as much as to say she was not ready, but I took hold of the tooth. She straightened back, groaned and screamed a little as if in pain. After I had pulled the tooth, she went back into a sort of hysterics, and became rigid, as if in spasms.

Q. At this point in the case, did you notice her lips, whether they were pale? A. Not much.

Q. Any change in her countenance? A. Not much.

Q. Did you notice her eyes? A. They were set wide open, like one in a spasm.

Q. You did not notice whether there was anything particular about the lips? A. No.

Q. Did you try the pulse at that time? A. No. I seized a napkin, moistened with water, and gave her a splash on the forehead. She seemed to revive, and I saw a flush of color come over her face. I set her up and took my ammonia water and applied that to her nose; then I spoke to Mrs. Sawyer. Mrs. Crie was sitting up in the chair, inclined a little forward at that time, and I was applying ammonia and water to the face. Mrs. Sawyer came in, and I asked her to loosen her dress, which she did. Then I saw a change again, back to paleness, and I said, "Call the other doctors." Dr. Osgood arrived first. We unloosed Mrs. Crie's corsets. Dr. Osgood rubbed her spine, and I sent the porter after another physician. We continued to rub her and apply very strong ammonia, and, finally, after Dr. Lamson came in, we removed her to the large room and, raising her arms, tried in every way to set up a respiration. We sent for a battery and used that. We worked over her till we all came to the conclusion that she was past all restoration.

Q. Can you tell us how long after she fell back into this spasm it was before respiration ceased? A. I should say about fifteen minutes.

Q. How long did the flush continue? A. It might have been two minutes.

Q. Then, as I understand, she fell back at once? A. As soon as the shade went back, I called for help. After administering these anæsthetics, there are two peculiar shades. There is the shade for faintness, and a shade from sickness at the stomach, and they are perfectly distinct.

Q. What was your opinion of this peculiar shade then? A. I thought it was a pallor from faintness.

Q. From the time she had this spasm and during the time you were administering the ammonia, was she sitting up in the chair? A. Yes, sir; but after the doctors came in they removed her to the waiting-room and laid her down.

Q. Was she breathing then? A. She was dead.

Q. How long had you begun the administration of ether before you extracted the tooth? A. About a minute or a minute and a-half.

Q. During that time did you feel no pulse? A. Never do that. Always watch the side of the head, the temporal artery.

Q. Do you think there is any danger of death occurring from giving ether alone? A. I never had anything that appeared like it myself; nor in chloroform.

Q. You have not considered then that there was any danger? A. No, I do not—that is, unless you administer it as they do in England. I should think they would kill every other one, by using a napkin as they do. But if chloroform be given as I give it on a sponge, with plenty of fresh air, I don't consider it any more dangerous than ether; but a person must discriminate between individuals, whether he would give ether, or gas, or chloroform or anything, and these things must be learned by practice.

Q. You considered her to be a person lacking somewhat in vitality, and therefore you didn't choose to put her fully under the influence of it (the anæsthetic)? A. Yes, sir.

Q. Do you consider either of these anæsthetics more dangerous than the others? A. I suppose chloroform would decompose blood quicker than ether.

Q. Do you know of any difference in chloroform? A. I have never used but one kind, Squibb's.

Q. In what way do you keep it? A. Always in a dark closet and corked as tight as I can.

Q. Do you know of any difference in the quality of ether? A. No, only from the seller's opinion of it. I use Powers and Weightman's concentrated.

Q. How much of this mixture did you generally make at a time? A. Not more than a couple of ounces at once.

Q. What was the proportion of chloroform that you generally intended to have in? A. Less than half, by volume.

Q. Did you keep that mixture a long time? A. No, but I would most always add more ether if it had been standing a little while.

Q. Did you state that you made this mixture you administered to Mrs. Crie that day? A. I had a little in a bottle and I added more to it, before I gave it to her. I had used it a week before.

Q. What is your reason for adding in chloroform to the ether? A. Well, I think it is safer. Ether is a great stimulant, and when you have a little chloroform, the patients are not so noisy or excited as they are under pure ether. That is my reason, not that I feared one or the other.

Q. You would not hesitate to give any quantity of chloroform? A. No, sir. If amputation was to be performed I had as soon use chloroform as ether.

Q. On the whole, which anæsthetic do you consider the most safe? A. I think I should use ether for safety. Ether and chloroform combined, in my idea, is much better than either of them alone.

Q. Do you feel any anxiety when about to administer chloroform or ether or the mixture? A. No.

We understand that at the next meeting, Dr. Wood will give the results of his analysis of the anæsthetic, that Mrs. Sawyer will be examined, and that expert testimony on the use of anæsthetics will be heard.

We have said that we should make no comments on the evidence while the investigation is in progress, but we may without indiscretion express our gratification at Dr. Ainsworth's course in giving the affair a thorough and public examination. This should be done in every case of death from anæsthesia.

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**INFLAMMABILITY OF ETHER.**—In a late number of the *British Medical Journal*, Mr. Hutchinson, writing upon ether, expresses an apprehension of danger from the inflammability of the vapor, and advises against its use after dark. Ether is employed at our hospitals indifferently by night and day—as it also is in midwifery. Its practical safety is doubtless partly owing to the fact that the air, cooled by its evaporation, establishes a downward current, so that a match placed a few inches above an ether sponge at the edge of a table will not ignite it; while below, the vapor readily takes fire. B.

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## The Hospitals.

### MASSACHUSETTS GENERAL HOSPITAL.

(Saturday, November 15, 1873.)

THE following operations were performed:—Hare-lip, Ulcer of the Leg, Stone in the Bladder, Erectile Tumor of the Cheek, Mucous Cyst of Lip, Ingrowing Toe-nail, Tumor of the Back, Stricture of the Urethra with urinary extravasation and perineal abscess. On Monday, at the clinical lecture, Dr. Bigelow operated for Stricture of the Urethra.

The hare-lip, single, in a baby six months old, was complicated with cleft-palate. Dr. Bigelow operated by the method described in the last report.—Dr. Cabot amputated at the upper third of the leg in the case of a large and progressive ulcer of the leg, taking the flap from the calf. Grafting had been tried successfully by Dr. C., the ulcer having been reduced to the size of a cent, when he left the hospital. The tissue which resulted from the grafts, was stated by patient to have been the last to yield, when ulceration recurred. The ulcer nearly surrounded the leg.—The patient with stone was a man sixty years old. The usual symptoms had existed for a year, and in addition, during the past three months, he had suffered from frequent attacks of retention, relieved by the catheter. On examination under ether, the prostate was found to be enlarged, and the stone, after measurement by the lithotrite, one of unusual size. Dr. Bigelow remarked that the case, though unfavorable in any point of view, promised a better result from lithotomy than by lithotrity. He then performed the lateral operation. The prostate required free division in several directions, and subsequent dilatation by the forceps and fingers before the stone was extracted. The latter measured two and five-eighths inches in its longest diameter, by two inches in its shortest, and was one inch thick at the centre, diminishing slightly toward the circumference, being a flat ovoid, and weighing two ounces, three drachms and ten grains.—The tumor inside the cheek was erectile, and projected into the mouth at a point opposite the molar teeth. It was congenital and had been operated upon once before. Dr. Cabot strangulated it by ligature. Another growth of the same character existed upon the tongue.—Dr. Bigelow excised from the lip an inspissated mucous cyst, and cauterized its cavity with nitrate of silver.—He then performed evulsion for a toe-nail ingrowing at both sides, and with the spherical rasp destroyed the matrix at both corners, remarking that a radical operation best economized the time of this class of patients.—A small painful tumor of the sacral region had existed sixteen months

within the patient's knowledge. It was adherent to the fascia over the gluteus maximus, and was removed by Dr. Cabot. Its gross appearance was that of a white fat containing a cyst. The inflammatory contents of the latter, together with its intimate connection with the bone, suggested its possible relation to an obliterated spina bifida.—A middle-aged man had had stricture after gonorrhoea complicated with local injury from the recoil of a gun. A large urinary abscess occupied the perineum, and the patient was suffering from retention. Dr. Cabot evacuated the abscess and opened the urethra behind the stricture. The latter was then dilated by a Voilemier's instrument and an elastic catheter left in the bladder.—On Monday, Dr. Bigelow, during his clinical lecture, dilated with the same instrument a close, double stricture of long standing.

H. H. A. BEACH, M.D.

### Medical Miscellany.

It is proposed, in Italy, to erect a monument to Eustachius. Few anatomists have had their trumpet so much blown.

**MODERN SURGERY.**—Under this title, Mr. Erichsen has published his Introductory Lecture at University College.—*Dublin Medical Press and Circular*.

**PROF. SIGMUND**, of Vienna, has obtained a six months' furlough, and intends spending the winter in Italy. Prof. Zeissl is spoken of as likely to continue the class for the present.—*British Medical Journal*.

A petrified child has been exhumed at Cheyenne, Wyoming Territory, according to a writer in the *Cincinnati Lancet and Observer*. It had been dead for two years, and is described as absolutely perfect and statue like.

**COMMENCEMENT** at the Medical department of Dartmouth College occurred on November 5th. The address was delivered by Dr. A. H. Crosby, the graduating class numbering twelve.

**CHLORAL IN CHOLERA.**—Dr. Nepveu (*Gazette Méd.*) has found some service in using chloral in cases of cholera in doses of four grammes (sixty grains) in a cup of tea. He cites two or three cases as evidence of this. Opium, he says, acts slowly; chloral rapidly, and in fifteen or twenty minutes produces a sound sleep. When it is rejected by the mouth, it may be subcutaneously injected in very concentrated solutions.—*The Doctor*.

**THE CHOLERA IN EUROPE.**—There has been a slight increase in the number of cases in Vienna lately. From the 8th to the 15th of October, there were 72 cases; the mortality amounts to 72 per cent. There have been reported, thus far, in Berlin, 996 cases, of which 669 have proved fatal. There were 64 deaths in Havre from the 10th to the 17th of October. Sixteen deaths from cholera are reported during the week in the Paris hospital in the *Progrès Médical*.—*British Medical Journal*.

**THIRTY CHILDREN POISONED.**—The London *Chemist and Druggist* gives an account of a singular case of wholesale poisoning at Blackburn, England. At a coroner's inquest, held on account of the sudden death of a child three years old, it was proved that on the previous Wednesday a quantity of ashes had been carted from the extensive manufactory of Messrs. Jackson Brothers, George Street West. With these ashes there had been intermingled a quantity of arsenical soda, which had been supplied to the Messrs. Jackson for manufacturing purposes. The deceased and twenty-nine others had picked up the soda in question under the impression, from its crystallized appearance, that it was alum, and had sucked it. The deceased died from its effects, and all the others had been attacked with sudden illness, but only one other case proved to be fatal.—*Boston Journal of Chemistry*.

**RUNNING A POISON TO GROUND.**—Dr. Corfield, who acted as medical inspector of the suspected farms during the late epidemic of typhoid fever caused by the distribution of infected milk by the Dairy Reform Company, stated last week, in Birmingham, in reference to this epidemic, that "the cause of that epidemic is known with absolute certainty, the very channel by which the poison got into the dairy-well having been recently unearthed." We believe that a direct communication has been traced, from the very spot at which the typhoid excreta were buried, into the well, and that the typhoid poison which infected the milk has been literally run to ground.—*London Medical Record*.

**DISLOCATION OF VERTEBRÆ.**—Dr. J. W. Brooks, of Chicago, reports the following interesting case in the *Chicago Medical Journal* for Nov., 1873 :—

Sept. 26th, 1872, I was requested hurriedly to visit F. B., a delicate, pale boy of 8 or 9 years. On arriving, I learned that on the previous evening, while playing at somersault in his father's parlor, he had injured his neck. Examination revealed a sub-atlo axoid luxation. The chin was directed a little upward and to the right; the head was immobile; there was some numbness below the seat of injury, in all the members of the body; he was exceedingly nervous; there was no intense pain, but, as he expressed it, "it hurt all the time;" with a pale, damp, cool skin. With an assistant to steady and hold down the shoulders, and standing directly behind him (he being half recumbent), with a hand on either side of the cranium, and the forefinger separated from the middle finger so that one forefinger of each hand would come before the articulation, and the middle finger of each hand behind, I proceeded to rotate carefully, and at the same time to make counter-extension; presently an audible click announced the return of the parts to their normal position. Convalescence was soon established.

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#### NOTES AND QUERIES.

**MEDICAL MULES**—the offspring of the union whose "happy consummation" was so aptly described in the last JOURNAL, p. 490! Fortunately for the community, mules cannot propagate. PESTLE.

**ERRATUM.**—In issue of the JOURNAL for Nov. 6, 1873, page 448, line 32, for "increased" read *incurred*.

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#### MORTALITY IN MASSACHUSETTS.—Deaths in eighteen Cities and Towns for the week ending November 8, 1873.

Boston, 157—Charlestown, 15—Worcester, 18—Lowell, 13—Chelsea, 4—Cambridge, 16—Salem, 6—Lawrence, 18—Lynn, 14—Gloucester, 6—Fitchburg, 6—Taunton, 5—Newburyport, 7—Somerville, 8—Fall River, 29—Haverhill, 3—Holyoke, 4—Pittsfield, 4. Total, 333.

**Prevalent Diseases.**—Consumption, 62—typhoid fever, 22—scarlet fever, 19—pneumonia, 19—croup and diphtheria, 14.

GEORGE DERBY, M.D.,  
Secretary of the State Board of Health.

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**DEATHS IN BOSTON** for the week ending Saturday, Nov. 15th, 128. Males, 71; females, 57. Accident, 3—abscess, 2—apoplexy, 2—asthma, 1—Inflammation of the bowels, 1—disease of the bladder, 1—bronchitis, 3—Inflammation of the brain, 4—disease of the brain, 6—cancer, 4—cholera infantum, 2—consumption, 20—convulsions, 2—debility, 1—diarrhoea, 1—dropsy, 2—dropsy of the brain, 1—dyspepsia, 1—exhaustion, 1—scarlet fever, 13—typhoid fever, 4—gangrene, 1—gastritis, 2—disease of the heart, 6—Intemperance, 2—disease of the kidneys, 6—disease of the liver, 1—Inflammation of the lungs, 10—congestion of the lungs, 3—laryngitis, 1—marasmus, 4—measles, 1—noma, 1—old age, 6—pleurisy, 1—rheumatism, 1—scalded, 1—septicæmia, 2—spina bifida, 1—tumor, 1—tabes mesenterica, 1—unknown, 1.

Under 5 years of age, 42—between 5 and 20 years, 13—between 20 and 40 years, 26—between 40 and 60 years, 24—over 60 years, 23. Born in the United States, 87—Ireland, 32—other places, 9.